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* WASHTENAW IMPRESSIONS *
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USES OF WASHTENAW COUNTY STREAMS WITH PARTICULAR REFERENCE TO WATER POWER

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Forty years ago, a Miss Katherine Steebe was a participant in the activities of the office of the late Gardner S. Williams, Consulting Engineer, who was engaged in the development of the water powers of the Huron River. From 1905 to 1925, many miles of river were surveyed and several water power plants constructed for the Detroit Edison Company. About the middle of this period, love intervened in the life work of Miss Steebe, and a certain Mr. I. Wm. Groomes succeeded to her responsibilities. We are all sufficiently familiar with the history of that happy romance!*

In dealing with the suggested subject, the history of the water powers of Washtenaw County, I decided to include a discussion of other uses of our streams, with particular reference to water power. My theme will be that a cycle has been in progress - a cycle with a period of about 200 years. Over this time the uses of the streams have included: recreation, food supply from fish, navigation, the grinding of grain, the operation of mills of various sorts, the production of electricity, water supply, and the disposal of wastes. For over 100 years the emphasis has been on water power; but we are now well advanced in a cycle which will omit power entirely. For years we may continue to use the streams as a source of water supply; we will need them forever to dispose of our wastes; but as time goes on the emphasis will be on recreation. From recreation to recreation and the cycle will be complete.

As water is a necessity to the life of the individual, so is a flowing stream an important element in the comfort and convenience of a community. It is interesting to glance at a map and note that most cities and towns are located on or near a river, creek or lake. In Michigan, with its wealth of streams and lakes, there are few exceptions to this rule. In Washtenaw County the principal centers of population are along the Huron River or its branches, the Raisin River, and the Saline River. Dexter, Ann Arbor, and Ypsilanti claim the Huron River; Chelsea is on Mill Creek; Manchester is on the Raisin; Saline and Milan on the Saline River. And, following the Raisin River downstream into Lenawee and Monroe Counties, one passes

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*Mrs. I. Wm. Groomes, Secretary-Treasurer of the Washtenaw Historical Society, 1947-date. Ed.

through Clinton, Tecumseh, Adrian, Blissfield, Deerfield, Petersburg, Dundee, and on to Monroe.

Why did the settlements take place along the streams, and why are the communities that survive required to remain near running water? The original clean clear streams, maintaining their flow during the summer by the outflow from the wooded areas and swamps, provided land drainage, recreation, fish for food, navigation, and water power. In Washtenaw County, as elsewhere in the early days, we read that the forests and waters abounded with fish and game. The flow in the streams in those days was sufficient for limited navigation.

The Indians in their canoes travelled upstream to the headwaters of the Huron, thence by Portage to the headwaters of the Grand River and on to the west. One route was through Little Portage Lake, thence westerly through Half Moon and Patterson Lakes, through Unadilla on Portage Creek, and thence into the headwaters of the Grand River. The number of "Portage" lakes and creeks in Washtenaw and Jackson Counties suggest other portages between the Huron and Grand Rivers.

In 1908 I first encountered the legal ruling that the Huron River was a navigable stream up to Rawsonville. All deeds to property below Rawsonville run to the river bank; all deeds upstream to the thread of the stream.

In Mr. Finney's history of Washtenaw County* (from which I shall make a number of quotations), we are told that "flat boats of fifteen or twenty tons burden, propelled by poles in the hands of operators, had been coming up the river since the first year of the settlement [of Ypsilanti, in 1825] as far as 'Snow's Landing', now Rawsonville, the remainder of the trip to Ypsilanti being by wagon;" and that in May, 1834, a boat made the trip from Ypsilanti to Detroit "with a load of flour consisting of 125 barrels, the entire distance being covered in thirty-six hours." A Detroit newspaper, commenting on this trip, said that "after the slight impediments to the navigation are removed...by expending a trifling sum of money, the Huron river may be rendered navigable as far as Ypsilanti or Ann Arbor for steamboats of from thirty to forty-five tons." And "the expectation" at that time "that hereafter the produce and importations of a considerable portion of Washtenaw County will be transported by water" might have been realized for a time had it not been for the "Detroit and St. Joseph Railroad" which was chartered in 1832 and completed to Ypsilanti in 1838 as the "Michigan Central."

Transportation in the early years was, however, difficult and expensive; "it was a long and tiresome trip to Detroit to procure flour and impossible to bring back lumber in large quantities." This condition forced the rapid building of grist and saw mills. They were built all over the county in the ten years following 1825. No stream was too small to serve the purposes of the early settlers.

*Historic Michigan, published by the National Historical Association and dedicated to the Michigan Pioneer and Historical Society in commemoration of its fiftieth anniversary. A 3rd vol. [1924] devoted to Washtenaw County, edited by Byron Alfred Finney.

It is interesting to read in Mr. Finney's history how corn was ground before the first grist mill was erected. "A woman who had come into the County in 1823 writes: 'It was amusing, the first fall and winter, to hear the corn mills in operation every morning before daylight. There were two in the settlement (Woodruff Grove). They were made as follows: A hole was burned in the top of a sound oak stump; after scraping this clear from coal, a stick about six feet and eight inches in diameter was rounded at one end and hung by a spring pole directly over the stump; a hole was bored through this pestle for handles and the mill was complete. A man would pound a peck of dry corn in half an hour so that one-half of it would pass through a sieve, and little of any other kind of bread was used for two years'."

However, this situation did not last long. We read that by 1825 the first grist mill had been built in Woodruff Grove, probably at the site of the Ypsilanti Water Works dam. And "in the spring of the same year Amariah Rawson had completed his sawmill and placed it in operation, where Rawsonville now stands." (19)*

Between 1825 and 1829 there was a grist mill and a saw mill, "another flour mill," and water power to run machinery in a foundry, all developed in Ypsilanti. About the same time there was a sawmill and grist mill built in Ann Arbor. In 1826 a saw mill and grist mill were built on Fleming's Creek at the site of Dixboro (1). In 1827 a saw mill was built "in Dexter Township," presumably on the Huron River at Hudson Mills (2); and Judge Dexter had already built a dam across Mill Creek near the village of Dexter. We also read that in 1828 a saw mill was built in Salem Township, although one may be at a loss to know upon what stream; it may have been on the head waters of Fleming's Creek. (3) In 1832 a saw mill was built at Dover on the Huron River. (4) In 1832 and 1834 two saw mills were built in Lima Township, probably on the South Fork of Mill Creek (5); and in 1835 a grist mill appeared in Webster Township, probably on the Huron River in the Village of Dexter. (6) In 1854 a paper mill was built at Geddes (7); and in 1879 a saw mill appeared in Scio Township, which may have been either at Scio (8) or Delhi Mills.

I have found no dates on the other streams except that a saw mill and grist mill were built at Manchester (9) in 1832; and that the original mill at Sharon (10) was probably built about the same time.

Turning now from Mr. Finney's history to an 1874 atlas of the county, one is amazed to note the locations of 58 mills. The Huron River, in particular, was a useful stream, as it falls 200 feet from Portage Lake to Rawsonville. But Mill Creek had its share, also Fleming's Creek, and likewise the Raisin and Saline Rivers, and Paint and Stoney Creeks in Augusta Township.

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*Figures in parentheses refer to mill sites located, approximately, on the appended sketch map.

On the Huron River we find a mill at Dover (4), at the first road crossing south of Portage Lake, two at Hudson Mills (2), where Territorial Road crosses the Huron. At Dexter, there were four mills, including two on Mill Creek (6); at Scio we find three (8); at Delhi three (11); at Osborne, just below Delhi (12), one; at Fosters there were three (13), including a paper mill and a woolen mill; at the present site of Barton Dam (14) "where a town was laid out a short distance above the Village of Ann Arbor that was to deprive the latter of all claims to existence." Then above Ann Arbor there was a dam just west of Whitmore Lake Road and the M.C.R.R. (15) In Ann Arbor we find a woolen mill, Sinclair's Mill, and the Ann Arbor Agricultural Works, all taking their supply from the old Argo head-race. (16) Also there was a grist mill on Allen's Creek, near the foot of Main Street, at the end of a long head race which extended back to the west to about Huron Street; and near the upper end of this race, on the south side of Huron Street, there was a foundry that used water power. And over in the 5th ward there was a grist mill on Broadway, where the old creek crossed the street, with a dam about 1000 feet upstream, in the valley of the present highway cut-off, probably near the location of the present Arbor Springs Water Company.

Below Ann Arbor was "Geddesburg" (7), and then the Superior Paper Mill. (17) In Ypsilanti (18) there was a woolen mill at Forest Avenue on the south side of the river, and another mill on the north side; then a grist mill and a flour mill at Cross Street; the "Huron Mills" below Congress Street; and finally Cornwell's paper mill at Race Street, site of the present water works dam. At Rawsonville (19) there were two mills.

This totals about 30 mills on the Huron River proper, plus three on the creeks at Ann Arbor.

Now going to Mill Creek, there was a mill on the north branch, at the outlet of Mill Lake (20), one on the middle branch at a spot once called Sylvan Center (21), southwest of Chelsea; and two on the south branch, one in Lima Township (5) and another further west in Sylvan Township (22), and two near the outlet in Dexter (6). This totals six.

On Fleming's Creek, there were at least two mills, one still existing at the River Road crossing (23), and one at Dixboro. (1) Also, as noted above, there was a sawmill built in Salem Township in 1829; it must have been on the upper waters of Fleming's Creek. (3)

This makes a total for the Huron and its branches of 42 mills.

On the Raisin River, at Sharon (10), there were originally two mills; at Manchester (9) there were two just south of Broadway, and two on the east side of town, a grist mill and a saw mill; and at River Raisin (24) in Bridgewater Township there were two, a grist mill and a saw mill. This totals eight on the Raisin River.

On the Saline River there were two mills at Saline (25), one about a half mile south of Saline, and another about one mile south of Saline; and there was one at Mooreville (26) in York Township. This totals five on the Saline River.

Also, believe it or not, there was a mill on Paint Creek (27) and two on Stoney Creek (28), all in August Township. Stoney Creek rises in York Township and flows southeasterly into Lake Erie.

This makes a total of 58 mills in Washtenaw County, seventy-five years ago. Of course there were not that many dams, but there were probably at least 38 dams. These first small water powers consisted of low head dams, 10 feet or less in height, of timber and stone-fill, with frequently a head race or a tail race, or both, with one or more mill buildings taking their water supply from the common race.

To a considerable extent these early mills were home-made, probably with wooden overshot or undershot water wheels, wooden shafting and gears, driving mill-stones, saws, etc. These wheels looked like the side paddles on a Mississippi River steam-boat or one of the present D & C steamers. As the side-wheelers were superseded by propellers, so the old mill wheels were soon replaced by reaction turbines.

Much ingenuity went into the construction and operation of these early mills. I was fortunate to live during the winter of 1910-11 at the home of one of these old mill-wrights, when on my first water-power job on the St. Joseph River. This man, Mr. Leland, was then in his 80's, and he lived beside his old mill and machine shop which were still standing. In spite of his age and infirmities he was still a skilled mechanic. One had but to know such a man to realize the native skill, inventiveness and self-reliance of the old mill-wrights.

If one scours Washtenaw County, the remains of some of these old mills are still to be found. A few have been rebuilt. Recently we visited Unadilla and talked with the daughter of the man who owned and operated the old mill. (29) We also visited the remains of the site on the south branch of Mill Creek (5), near Fletcher and Jerusalem Roads, and visited with a store-keeper at that corner who had owned and operated the mill and had sold the site to the Washtenaw County in 1932. This old mill had been built in 1832 and had changed hands five times in 100 years. The remains of the old mill dam, a long head-race and pieces of old machinery at the lower end of the race showed where a typical mill had been. From those still living, something can be learned of the life and activities that centered around these old mills.

Most of the old "grist mills" were built in the later 1820's and the 1830's. A few decades later, the available power of the Huron River justified consolidations of the smaller mills into large ones, using reaction turbines, for manufacturing purposes. "The first paper mill started in Ypsilanti, began operation in 1855, and was known as the Cornwell Paper Mills. . .The Peninsular Paper Company was incorporation in 1867. . .In 1897 the buildings on the north side (of the river) burned and the plant on the south side was enlarged." It was not until 1916 that the old wooden rock-filled dam was replaced by the present concrete structure and a power house built to generate electricity to operate the motors in the paper plant.

"In 1900 the Michigan Milling Company was organized for the purpose of manufacturing flour" in Ann Arbor, and this company consolidated the "old Argo Mills in the fifth ward". . .the City Mills

(built in the early seventies) and Delhi Mills, built in 1879. These three mills, thus consolidated, which had driven out the grist mills of the earlier days, were to give way, in their turn, to more modern electric power plants.

In 1905 the Detroit Edison Company began its purchases of the water powers along the Huron River. The first investment was made in July, 1905, with the purchase of the Geddes Power Plant of the Washtenaw Light and Power Company. Later in the year, the Argo Power at Ann Arbor was acquired, together with the powers at Osborne and Delhi, further up the river. Rights near the eastern limits of Ann Arbor were next acquired from J. F. Lawrence and the Felch Estate, forming part of a future improvement at Geddes. Then in 1907 the interests of the Harvey Cornwell heirs in powers at Barton and Fosters, the plant of the Ypsilanti Paper Company at Superior, and of the Deubel Manufacturing Company and Deubel Brothers at Ypsilanti were acquired. Following that, properties in the vicinity of and above Dexter were bought, and early in 1908 purchases in the vicinity of Belleville were begun.

The first dam built by the Edison Company was at Barton in 1912. This was followed in 1913 by the reconstruction of Argo with a concrete dam, higher head race embankments and a new power house. In 1914 the Superior Power House was rebuilt, and in 1918 the rock-filled dam, which had gone out in a flood, was replaced with a concrete structure. Previously, in 1916, the Geddes dam and power house had been rebuilt, and shortly thereafter the Peninsular Paper Company reconstructed their dam and power house at Ypsilanti. It was not until 1925 that the Edison Company built the French Landing plant (29), creating a lake through Belleville to Rawsonville.

This was the last construction undertaken by the Edison Company, although the water rights had been largely acquired on three more dams, namely one at Rawsonville, backing the water into Ypsilanti, and, above Ann Arbor, one at Delhi, backing the water up to Dexter, and one at Dexter, backing the water up over Portage and Base Line lakes.

This entire program for the Huron River contemplated nine plants, developing 225 feet of head, and creating a total pond area of 5500 acres, was estimated to cost $2,682,000 in 1912, and expected to produce 45 million Kilowatt hours annually at a cost of 0.6 of a cent per Kilowatt hour. But seven of these plants only were built, five by Edison, one by Peninsular Paper Company, and one by Henry Ford.

A large part of the cost of producing water power is interest on the investment; much of the cost of steam power is coal. Between 1912, when the estimates were made, and 1925, when French Landing was built, construction costs increased by about 250 per cent; and today construction costs are more than five times those prevailing in 1912.

The program of the Edison Company was an attractive one in 1912, but by 1925 rising costs caused its abandonment. Not only had water power costs gone up, but steam plant generating costs had gone down,

due to improvements in the efficiency of large high-pressure boilers and huge steam turbines. Also, Detroit had grown so much that the amount of power available on the Huron River was but a drop in the bucket. If all of these water-power plants had been built, and were now in operation, their combined annual output would probably not exceed six-tenths of one percent of the power generated in the several steam plants of the Edison Company.

Another factor affecting the decision was stream flow. The records began to show less flow than had been anticipated. The actual average flow during the last 20 years, including all floods, much of which must be wasted, has been less than the anticipated available flow, based on the records prior to 1912. River flows vary, of course, with the years and decades, and a year may come when the average annual flow will exceed all past records. But certain permanent changes have taken place, with the clearing and drainage of land, which accentuate both flood and low-water flows. Floods tend to be increased and low flows decreased; and unless the available storage is sufficient to effect considerable equalization of flow, the available power is reduced.

Also, the original program contemplated backing the water up onto Portage and Base Line Lakes for additional storage; but with the development of cottages on these lakes, many of them built down to low-water levels, such storage possibilities have been eliminated. And, incidentally, a new and difficult problem of the regulation of these lakes now confronts the owners of the lands and the public.

So, following 1925, the Edison Company began selling its rights. A purchaser who came into the market was Henry Ford. He bought the rights at Rawsonville and built that dam in 1930. Mr. Ford had novel plans in connection with water powers. His small plants were to be assembly centers for workmen who would devote a part of their time to farming small plots of adjacent land. He bought the rights on Mill Creek at Dexter, the dam at Sharon and rebuilt it; also dams at Manchester, and Saline, and Milan, and at Brooklyn (30) in Jackson County, and Dundee in Monroe County. He also developed a chain of five plants on the Rouge River in Wayne County, just upstream from his home, and others.

In the case of Rawsonville, Mr. Ford had a weird scheme incorporated in the design. Large oil-cylinder operated sluice gates were installed within the dam, having sufficient hydraulic capacity to empty the pond in the spring in order to make the land available for farming during the summer. The trouble with the plan was that, should the pond ever be emptied for summer farming, it could rarely be filled in the fall in time to produce power in the winter. So far as I know, no attempt was ever made to put this scheme into operation.

It is safe to prophecy that the days of water power in Washtenaw County are numbered. No new power will be constructed for its commercial value as water power alone. The existing dams can be maintained for decades, but the time may not be too far distant when the water wheels will cease to generate electricity. The art of power production moves on and, in spite of John L. Lewis, coal will produce the power needed in this area until it is superseded, as it will be, by atomic energy.

However, as I noted at the outset, there are three other uses of our streams that will continue - water supply, disposal of wastes, and recreation. The Huron River may continue for years to furnish us with a part of our water supply; wells alone will not meet the needs. With the clearing of the forests and the drainage of swamps, the levels of ground water have been falling everywhere. Washtenaw County is no exception. But there is enough water in the Huron River to provide an adequate supply for a larger population than we have at present, and it can be purified and softened to meet good health standards. If in the future a metropolitan area develops around Ann Arbor, the answer will be water from the Great Lakes. The problem of water supply, with the increased demands for manufacturing and other uses, is becoming acute for many inland cities. We are fortunate in Michigan to be surrounded by the Great Lakes. The time may come when many of our inland communities will lay long pipe lines to these lakes for water.

Finally, running streams will always be required to carry away our purified wastes. Sewage can be treated by modern methods so as to render it unobjectionable when discharged into the streams, but there is no other way to dispose of the purified effluent except through the natural water courses.

As to recreation, one may be sure that, in the eyes of the public, it will be the principal value in our streams in the future. An excellent example of the possibilities for recreational facilities is the new Kensington Park, on the Huron River, just north of Grand River Avenue. In this park the Huron-Clinton Metropolitan Authority, by the construction of a dam and creation of a lake, has provided a beautiful recreational area, in hilly country, with views suggestive of the natural vistas of mountain lakes. If you have not visited this park you should do so as soon as the season opens. You may then visualize more clearly the end of the cycle - the transformation of our present uninviting streams back into clear and sparkling waters for swimming, boating, fishing and skating, with sand beaches and picnic grounds, to the end that our children's children will have nature's playgrounds at their doorsteps, available to all.

Ann Arbor, Michigan
March 24, 1949

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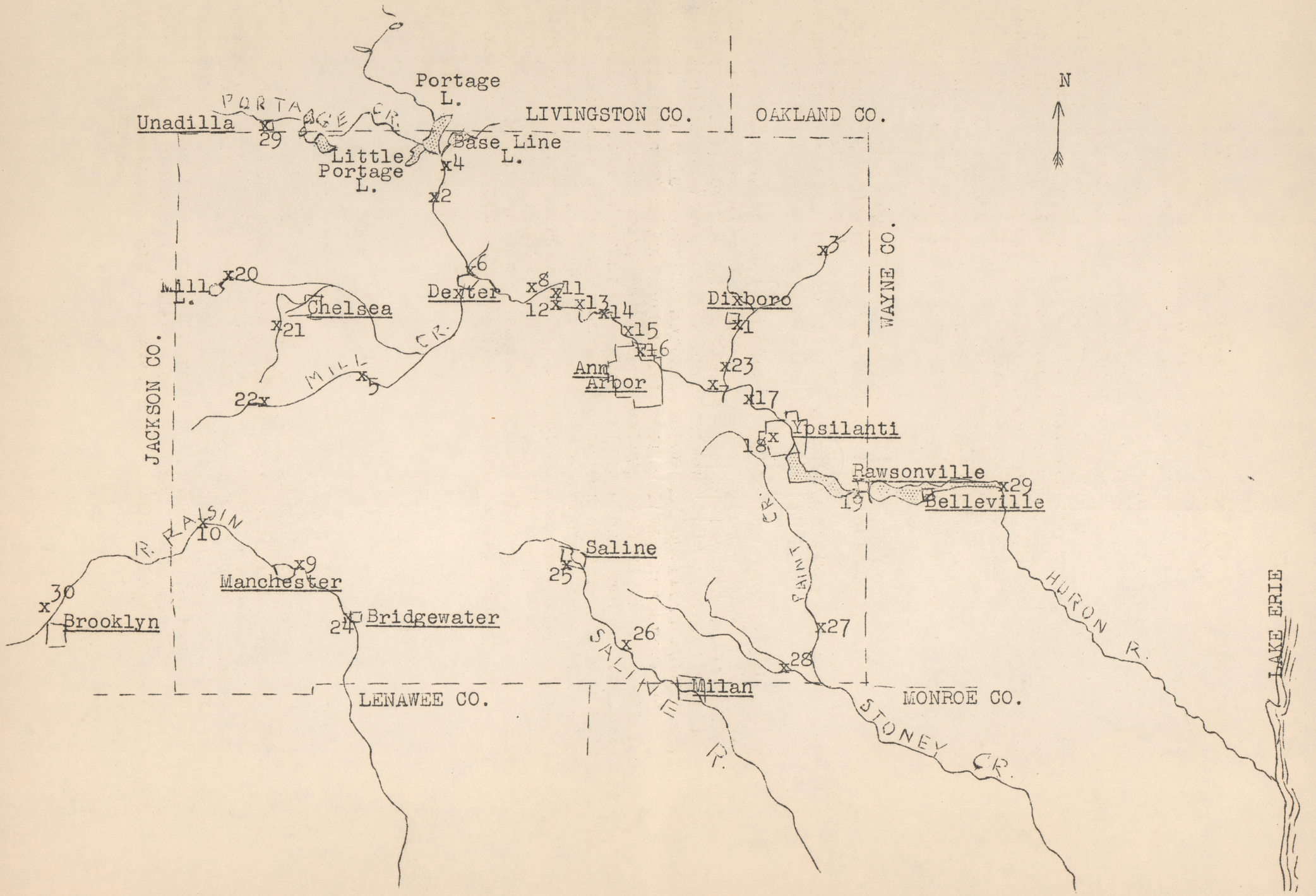
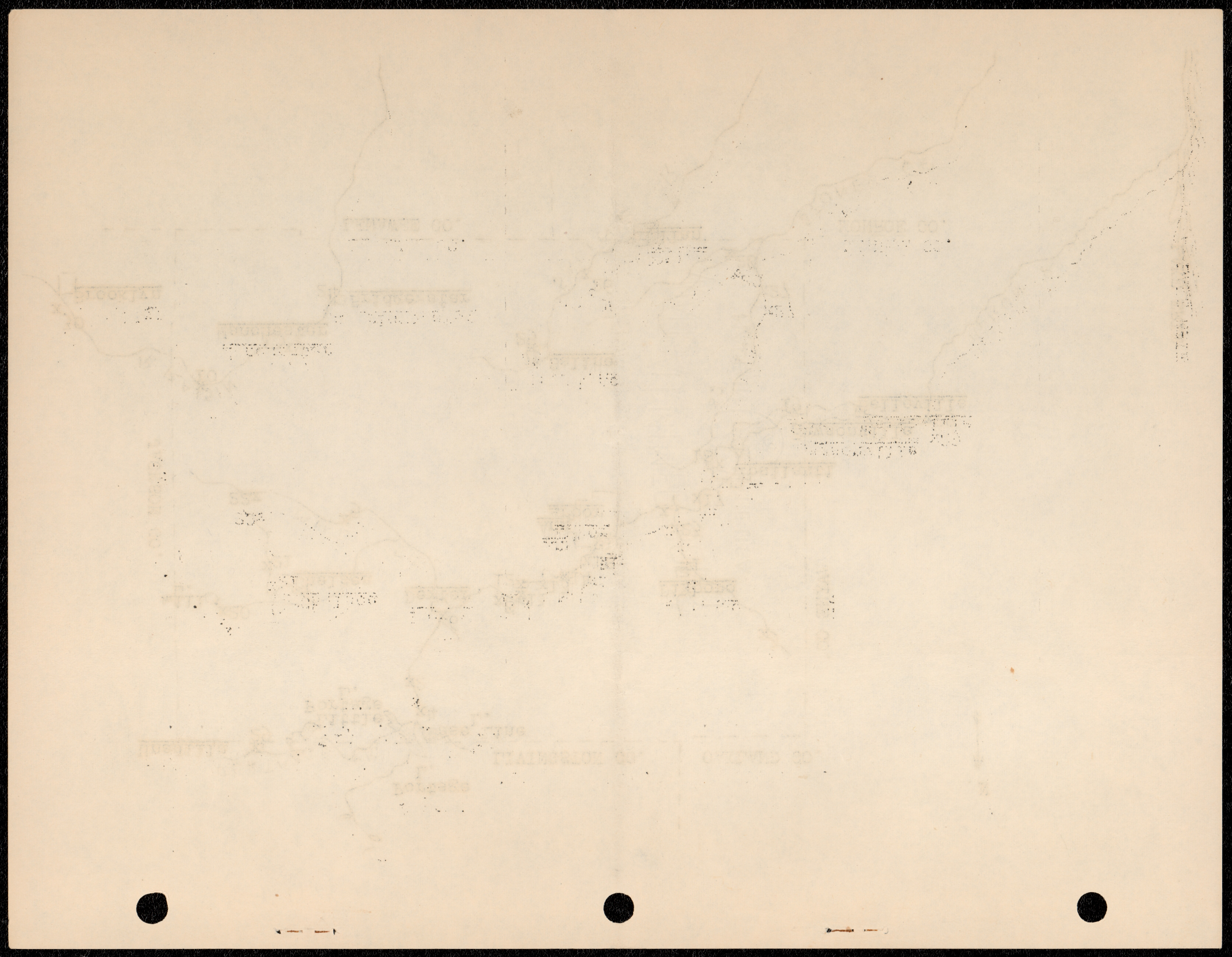
Announcing the appearance of Part I of Index of the History of Washtenaw County, Michigan, published by Chas. C. Chapman and Company, 1881, covering pages 1-799. Index compiled by Louis W. Doll and Geneva Smithe, Ann Arbor, Michigan, 1948. Typing and supplies furnished by Michigan State Library. Bound, typewritten copies available for reference at Michigan Historical Collections, Ann Arbor; Burton Historical Collections, Detroit; and Michigan State Library, Lansing. Part II, covering the remaining 953 pages, is in preparation. - Ed.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OAKLAND CO.
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JACKSON CO.
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LENAWEE CO.
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